



# Short Safety Subject

## GFCIs AT WORK AND HOME

**Definition:** GFCI = Ground Fault Circuit Interrupter. The GFCI is a fast-acting circuit breaker that senses small imbalances in an electrical circuit caused by the electrical current leaking to ground. If this imbalance occurs, the GFCI shuts off the electricity within a fraction of a second.

**How it works:** The GFCI device continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical circuit path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power by closing the circuit within as little as 1/40 of a second.

**What a GFCI Can and Can Not do:** It *does provide protection against the grounding fault* - which is the most common form of electrical shock hazard. A grounding fault occurs when a "hot" wire comes into contact with a grounded enclosure. If you happen to be in contact with the grounded enclosure of an electrical tool when a ground fault occurs, you will be subject to a shock unless a GFCI device is in use, and functioning as intended. The GFCI *will not protect you from line-to-line contact* hazards (i.e., holding two "hot" wires or a hot and a neutral wire in each hand).

**Where GFCIs are needed at home:** The shock hazards of a grounding fault are not isolated to just your work place. A grounding fault may occur at home in areas such as bathrooms, kitchens, garages, and basements. You need to be vigilant and make sure that the circuits you are "plugged" into are protected by GFCIs whenever using electrical tools or equipment in potentially wet environments. Most local building codes require receptacles in potentially wet locations, such as near sinks in bathrooms and kitchens, to be equipped with a GFCI device. It is also recommended that you use a GFCI device whenever you have any concerns about the integrity of the tool, equipment, or cord system.

**Actions you should take for electrical safety:** Always make sure the tools and cords you use are in good working condition and inspect them regularly for any visible damage. Failure in the insulation or grounding protection of your tools or cords could result in ground faults. Use GFCI devices. Take a little extra care so that you will not have a SHOCKING experience.